**April 20, 2006**

## I. Environmental Assessment for Department Administrative Rules Related to Modifications of ch. NR 243, Wis. Adm. Code.

DECISION ON THE NEED FOR AN
ENVIRONMENTAL IMPACT STATEMENT

(This decision is not final until certified by the Director of the Bureau of Integrated Science Services)

In accordance with s. 1.11, Wis. Stats., and Chapter NR 150, Wis. Adm. Code, the Department is empowered to determine whether it has complied with s. 1.11.

The attached analysis of Proposed Revisions of chapter NR 243, Wis. Adm. Code pertaining to the efforts to incorporate changes to federal Concentrated Animal Feeding Operation (CAFO) rules is of sufficient scope and detail to conclude that this is not a major state action which would significantly affect the quality of the human environment. An environmental impact statement is not required prior to final action by the Department to adopt this rule. This determination was made considering the attached analysis and the following factors:

**Environmental Effects**

Many water bodies in the state are currently not meeting their designated uses, in part because of pollutants associated with animal feeding operations. Animal feeding operations and their land application activities can represent significant pollutant loads to state streams, lakes, groundwater and wetlands. Federal and state law recognize the need to address water quality impacts from certain animal feeding operations under the Wisconsin Pollutant Discharge Elimination System (WPDES) permit program. The WPDES permit program has been an effective means of addressing impacts to waters of the state from Concentrated Animal Feeding Operations (CAFOs). Revisions to incorporate changes to federal CAFO rules will help to reduce pollutants from these operations and will have short and long term positive effects on water quality.

**Cumulative Effects**

The cumulative impacts of revised rules for CAFOs are expected to be beneficial by reducing pollutant loads from CAFO production area and land application area runoff. The beneficial results of this proposal are expected to outweigh the costs of implementation.

**Risk or Uncertainty**

The goal of these revisions is to strike a balance between providing clear and consistent best management practices (BMPs) while allowing producers and Department staff to exercise best professional judgement where necessary. Because of certain allowances for flexibility, there may be instances where water quality impacts occur due to inadequate BMPs or operational problems. The Department will continue to monitor actual and potential impacts from CAFOs via the WPDES permit program.

**Precedent**

The rules do set precedent on how CAFOs in the state of Wisconsin are regulated, although local units of government may exercise local authority under certain conditions to impose more stringent requirements. Ch. NR 243 does allow for large CAFOs to discharge agricultural storm

water to navigable waters from land application areas. In addition, the Department may include certain conditions in WPDES permits on a case-by-case basis to ensure water quality is protected.

**Controversy**

There may be controversy associated with the proposed requirements for CAFOs. In some instances, the Department has limited ability to address this controversy because federal law clearly requires the conditions that are controversial. There continue to be divergent views among stakeholder groups on what constitutes practices that are protective of water quality, especially as they relate to design requirements for solid and liquid manure storage, phosphorus-based nutrient management requirements and restrictions on manure and process wastewater applications on frozen or snow covered ground.

_____ _____

Tom Bauman, Evaluator Date

_____ _____

Russ Rasmussen, Director Date
Bureau of Watershed Management

Certified to be in compliance with WEPA

_____ _____

Director, ISS (or designee) Date

## II. History and Background

Under state and federal law, certain livestock operations, referred to as Concentrated Animal Feeding Operations (CAFOs), are defined as point sources of pollution. At the national level CAFOs are regulated under the National Pollutant Discharge Elimination System (NPDES) permit program. Wisconsin has delegation from U.S. EPA to implement the NPDES permit program and does so via the Wisconsin Pollutant Discharge Elimination System (WDPES) permit program. The criteria for determining whether an operation is a CAFO and is required to obtain a WPDES permit depends on the size of an operation. Operations with 1,000 animal units (the equivalent of 700 milking cows, 1000 beef cattle, 2500 pigs, or 55000 turkeys) automatically are required to obtain a WPDES permit because of their size and actual discharges to waters of the state. Operations with fewer than 1,000 animal units may be categorized as CAFOs based on unresolved discharges to navigable waters or that cause fecal bacterial contamination of wells.

The Department has been issuing WPDES permits to CAFO since the mid-1980's with the creation of ch. NR 243, Wis. Adm. Code, which regulates impacts to water quality from animal feeding operations. There are approximately 145 CAFOs currently permitted under the WPDES permit program, with five additional permit applications being processed. WPDES permits address the storage and disposal or land application of CAFO manure and associated process wastewaters. This includes requirements associated with nutrient management (balancing manure/process wastewater nutrient applications with crop uptake), runoff control (prohibiting runoff from areas of animal confinement except under certain storm event conditions), manure and process wastewater storage (ensuring manure and process wastewater are properly stored) and monitoring and reporting to determine permit compliance.

On April 14, 2003, the U.S. EPA completed revisions to federal rules for CAFOs. In response to the revisions at the federal level, Wisconsin has proposed modifications to ch. NR 243, Wis. Adm. Code, titled "Animal Feeding Operations." As part of the modifications to ch. NR 243, the Department convened an internal team of staff from the Agricultural Runoff Program as well as a 20-member Technical Advisory Committee (TAC) consisting of external stakeholders to provide input, guidance and direction to the revision process (see Appendix A for a listing of TAC members). Key issues considered by the TAC include:

- Calculating animal units using the mixed animal unit calculation
- Land application restrictions on frozen and snow-covered ground
- Requiring six months of storage for liquid manure
- Phosphorus-based nutrient management requirements
- Restrictions on land application activities near surface waters

The TAC met a total of 14 times beginning in September of 2003 and ending in February of 2005. While the modifications to ch. NR 243 were not based on a true consensus of TAC members, they were based on a general consensus that the proposed version needed to go to public hearing for broader public input and comment. Questions remained as to whether the proposed code requirements were too restrictive or not restrictive enough and whether they met federal requirements.

The Department accepted public comment on the rules, holding five public hearings in August and conducting eight information sessions in September throughout the state before closing the public comment period on October 14, 2005. The Department has done an extensive review of comments and has made some modifications to the rule. A summary of the comments along with responses to these comments and changes made to the rule are included in the final Green Sheet package for this rule.

## III. Proposal Description

### A. Proposal objectives

The administrative objective of the proposed rule modification is threefold:

- Incorporate revised federal CAFO regulations
- Update code to reflect current policies
- Update code to provide clarity of requirements

The environmental objective of the proposed rule is to better address impacts to waters of the state associated with CAFOs.

### B. Key studies, assumptions or policies

The proposed revisions to ch. NR 243 stemmed from revisions to federal CAFO rules as noted in the History and Background section. A key assumption was that ch. NR 243 in its present form did not adequately reflect revised CAFO rules and did not provide the needed authority or clarity to implement the federal rule revisions.

Primary references for the revisions to ch. NR 243 include:

- EPA supporting documentation for revisions to federal CAFO rules
- The Wednesday, February 12, 2003, Federal Register, containing the relevant parts of 40 CFR (Parts 9, 122, 123 and 412) that were modified and the attached preamble to these rules that reflect the reasoning behind EPA's modifications
- Natural Resources Conservation Service (NRCS) Technical Standards, in particular NRCS Standards 590 (Nutrient Management) and 313 (Waste Storage Facilities)
- Manure study references
- Wisconsin Phosphorus Index (P-Index)

In addition, the Department used the NR 243 TAC and public comments received as the basis for the final proposed rule.

### C. Major provisions and new requirements

The major provisions of the code revision and associated desciption are as follows:

- Animal Units: Prior to federal rule revisions, the CAFO NPDES permit program did not address immature animal (e.g., heifers, veal calves) or poultry operations with non-liquid manure handling systems. Animal unit numbers in ch. NR 243 have been modified to reflect those specified in federal regulations for heifers, veal calves and poultry where there is a non-liquid manure handling system. Although the federal regulations no longer use mixed animal unit calculations, the Department is proposing to continue to use mixed animal unit calculations. However, based on comments received during the public comment period, the Department has modified the public noticed mixed animal unit calculation such that it will now reflect the mixed animal calculation currently used in NR 243. In addition, the federal "individual" animal type calculation will be included in the rule, using animal unit numbers that are more stringent than those contained in current NR 243 for some animal types.
- General permits: Historically, the Department has issued individual WPDES permits to CAFOs. The revisions to ch. NR 243 outline the requirements for issuance of a general WPDES permit that could be used to cover a number of operations.
- Standard CAFO requirements: CAFO operators would be required to take a number of actions to address potential water quality impacts from their operations. These actions include managing storm water runoff (including outdoor vegetated areas where animals are not held in confinement), mortality management, restrictions on chemical disposal in storage or containment facilities, and development of an emergency response plan.

- NRCS 590: The proposed revisions would incorporate an updated version of the NRCS technical standard for nutrient management (NRCS 590, September 2005).
- Application restrictions within the Surface Water Quality Management Area (SWQMA): The proposed revisions include restrictions on manure and process wastewater applications that are intended to protect water quality and to address federal requirements mandating a 100-foot setback from navigable waters/conduits to navigable waters, a 35-foot vegetated buffer, or conservation practices equivalent to a 100-foot setback. The revisions attempt to identify conservation practices equivalent to the 100-foot setback as well as practices to be implemented within the SWQMA (1,000 feet of a lake, 300 feet of a stream) to protect against acute manure runoff events and long-term nutrient delivery to surface waters. These practices include reduced setbacks combined with tillage options, reduced application rates, and requirements for maintaining crop residue on fields.
- Restrictions on applying solid and liquid manure on frozen or snow-covered ground: Key proposed revisions include a prohibition on surface applications of liquid manure on frozen or snow-covered ground in concert with requirements for all CAFOs to have six months storage for liquid manure by January 1, 2010. Solid manure can be surface applied under certain conditions on frozen or snow-covered ground, except during the months of February and March. Proper incorporation or injection of liquid and solid manure is allowed under frozen or snow-covered ground conditions.
- Phosphorus delivery: All CAFOs would be required to implement phosphorus-based nutrient management. In addition to the phosphorus requirements in NRCS Standard 590, the proposed revisions add additional restrictions intended to address phosphorus delivery to surface waters.
- Manure stacking: The proposed rule allows for the temporary unconfined stacking of manure with 16% solids or greater, during winter months in lieu of storage in a designed storage facility.
- Responsibility for CAFO manure: The revisions identify the circumstances under which CAFOs are not considered to be responsible for the disposal/land application of the manure they generate.
- Monitoring/inspections/reporting: The revisions reflect federal monitoring, inspection and reporting requirements as well as additional requirements for maintaining and determining compliance with nutrient management requirements.
- Designating small/medium CAFOs: The revisions reflect federal and state authority to define and designate small and medium size animal feeding operations that have discharges to navigable waters or cause fecal bacterial contamination of a well as CAFOs and to issue WPDES permits for those discharges.

### D. Exemptions provided by this proposal

Exemptions from Obtaining Permit Coverage

Modifications to the proposed rule based on public comment have removed a proposed exemption relating to whether or not an operation is considered a CAFO and would need to apply for a WPDES permit. Operations with 1000 animal units or more (large size operations) are required to apply for a WPDES permit based strictly on the number of animal units at the operation. However, the public noticed version of the rule would have allowed operations to demonstrate that they have no potential to discharge to waters of the state and thus avoid permit coverage. Based on public comments, which referenced federal court decisions impacting EPA's revised CAFO rule, the allowance to demonstrate no potential to discharge has been removed from the proposed code. Instead, only those operations that do not have discharges to waters of the state do not need to apply for a WPDES permit. Given the sources of discharges (production area and land application areas) and the extent of waters of the state (surface waters, groundwater and wetlands) in Wisconsin, it is the Department's position that all large CAFOs that land apply or store manure or process wastewater in the state have discharges of manure or process wastewater pollutants that reach waters of the state via leaching or surface runoff and must apply for a WPDES permit.

Operations with 301 to 999 animal units, or medium sized operations, require permit coverage if they discharge pollutants to navigable waters (either via a man-made conveyance or directly to navigable waters that flow through the production area). Operations in this size range may also be designated as a CAFO requiring coverage under a WPDES permit on a case-by-case basis based on discharges to navigable waters or fecal bacterial contamination of a well. Operations that do not discharge to navigable waters or contaminate a well are not considered to be a CAFO and are not required to obtain coverage under a WPDES permit. Alternatively, the Department may choose to pursue elimination of the discharge that qualifies the operation as a CAFO either via implementation of statewide performance standards or issuance of a Notice of Discharge (NOD). In these situations, the operation is given a time schedule and, in some cases, cost sharing, to address the discharge. Operations that address the discharge are not required to obtain a WPDES permit.

Operations with 300 animal units or fewer (small size operations) can be designated as a CAFO by the Department and be required to obtain a WPDES permit if the Department determines they have a significant discharge to navigable waters or have caused fecal bacterial contamination of a well. As with medium size operations, the Department may choose to pursue elimination of the discharge that qualifies the operation as a CAFO either via implementation of statewide performance standards or issuance of a Notice of Discharge (NOD).

Exemptions from Permit Requirements

Permitted operations with fewer than 1000 animal units are not subject to the same permit requirements that apply to operations with 1000 animal units or more. While it is expected that requirements for any permitted operation would be similar, the Department has more discretion in determining permit requirements for operations with fewer than 1000 animal units. Regardless, permit requirements for operations with fewer than 1000 animal units would need to address potential water quality impacts from production and land application areas.

In addition, while existing source CAFOs are not exempt from compliance with the requirements of ch. NR 243, existing source CAFOs have been given additional time to comply with the liquid and solid manure storage design requirement.

Cost-sharing

While all permitted operations may be eligible for cost-sharing under certain state and federal (EQIP) cost-share programs, compliance with WPDES permit requirements are not contingent on the availability of cost-sharing.

## IV. Affected Environment

### A. Physical and biological environments affected by this proposal

The revisions to ch. NR 243 will affect water resources located near CAFOs sites and fields where they land apply their manure and process wastewater as well as areas downstream surface waters. The water resources impacted will tend to be in areas where agriculture is already the predominant land use. While agriculture is located throughout the state, CAFOs have tended to concentrate in certain areas. Looking at historical data, the majority of operations with 1000 animal units or more, the predominant size of operation permitted under the WPDES permit program, have been located in the southern two-thirds of the state, with fewer operations located in heavily urbanized areas (Milwaukee) and northern parts of the state. Recent trends have indicated a greater increase in permitted operations in the Department's Northeast Region.

It is expected that revisions to ch. NR 243 will result in additional protection and improvement to water resources in Wisconsin. This includes those portions of the 1404 miles of stream miles currently on the Department's 303(d) list of impaired waters that are impacted primarily by nonpoint sources or a blend of nonpoint and point sources and are located near CAFOs and CAFO land application areas. In addition, the proposed revisions will provide additional

protection to waters that are not impaired, including those that have been designated as Outstanding and Exceptional Resource Waters.

Groundwater and wetlands in the state will also be affected by the proposal. Groundwater and wetlands in rural areas can be impacted by applications of nutrients and other pollutants associated with manure and commercial fertilizer, as well as by manure and process wastewater storage or containment structures present at CAFOs.

### B. Units of government, industries, organizations and other parties affected by the proposal.

The revisions to ch. NR 243 will affect owners of animal feeding operations that are classified as CAFOs and are required to obtain a WPDES permit. A Small Business/Final Regulatory Flexibility Analysis has been developed since most of these operations are considered small businesses.

## V. Environmental Consequences

### A. Anticipated impacts on the physical and biological environment

The environmental impact of the revisions to ch. NR 243 and their implementation through WPDES permits will be positive. The proposed modifications to the public noticed version of the rule have reduced the positive impacts associated with the rule. The expectation is that compliance with the revisions to ch. NR 243 and WPDES permits issued under this authority will result in increased protection of surface water and groundwater quality and wetlands. Direct impacts will be lower levels of nutrients (nitrogen and phosphorus) and other pollutants associated with manure and process wastewater reaching groundwater, surface water and wetlands through better nutrient management planning and increased restrictions on manure applications on frozen and snow-covered ground. Longer, indirect effects will be improvements to habitat, increased populations of desirable fish species, increased water clarity, more stable streambanks and shorelines and a more balanced aquatic ecosystem.

### B. Anticipated direct and indirect economic impacts

There will direct economic impacts as a result of the rule revisions on affected parties. Positive economic impacts from cleaner water will be gained through more protective nutrient management and restrictions on land application of manure and process wastewater. These positive impacts will include increased recreational and tourism opportunities, improved ecosystem health and enhanced aesthetics.

Negative economic impacts could occur due to potentially increased odors at and around operations because of the requirement to have six months of storage for liquid manure. Stored manure is likely to have more odor when land applied than fresh manure. Properties near storage facilities and land application areas may experience decreases in value due to odors or stigma that can be associated with larger-scale livestock operations. In addition, there are potential negative economic impacts on the producers themselves that would result from the additional costs of building manure storage facilities. The extent that the proposed rule would result in these potential impacts is dependant on the number of operations that would have put in six months storage regardless of the rule revisions and the siting of the operations and storage facilities. It has been estimated that approximately 50-80% of CAFOs currently have six months of storage, even though it is not currently required under ch. NR 243. In addition, proper siting of operations and storage facilities, as well as the use of certain technology to reduce odors (digesters, covering of storage facilities, naturally forming crust with straw bedding) can greatly affect the impacts odors would have on surrounding properties.

A fiscal estimate for this rule was written for the impacts on state agencies and local units of government. In addition, the Department has completed a Small Business Analysis and Fiscal Impact Report outlining private sector impacts. These documents are included in the attachments of this rule package.

### C. Impacts of social or cultural environments, the regional availability of energy or other features not previously addressed

The impacts on the social and cultural environment are expected to be positive overall. Achieving the goal of improved water quality for rivers, streams, lakes and wetlands will be an asset to communities surrounding these water resources providing increased recreational opportunities, improved aesthetics, gathering places for community events and celebrations or quiet places for reflection.

The Department has also considered environmental justice in the analysis of these rules. The Department defines environmental justice as a continuous decision-making process that ensures participation by minority and low income populations in affected areas, along with the majority populations, in order to ensure that as an outcome all people receive the benefits of clean, healthy, and sustainable environments regardless of race, national origin or income.

The proposed rule will require the construction of structures or systems to meet permit requirements. While certain structures and practices were already required as part of the current version ch. NR 243 (e.g., runoff control systems), the proposed requirement to build six months storage for liquid manure will result in the use of energy both in terms of the actual construction of these structures and in the creation of certain materials used to build these structures. The operation of these facilities may also require energy use for pumps to transfer manure if gravity flow systems are not site-appropriate. Maintenance of these practices may also use energy such as the use of earth moving equipment to repair or replace structural components.

While the rule itself does not promote the establishment of larger-scale livestock operations, larger-scale operations are more likely to create energy via biogas generation (i.e., digesting manure to create methane which in turn can be used to create energy) that can increase the regional availability of energy or decrease the need for operations to use additional energy. The proposed rule does not require the use of biogas generation; however, there are incentives in the proposed rule for operations to consider implementing alternative technologies which may include energy production from manure.

## VI. Alternatives and Their Impacts

### A. No Action

The no action alternative would result in the following negative impacts:

- The Department would not meet the requirements of its delegation agreement with U.S. EPA to implement the NPDES permit program in Wisconsin by not having rules that adequately incorporate federal rules.
- Conditions in WPDES permits could be challenged due to inadequate authority in ch. NR 243 to impose certain restrictions on CAFOs.
- Water quality in the state would not be protected to the extent that it would be under the proposed rule, especially as it relates to phosphorus based nutrient management and land application restrictions on frozen and snow covered ground.
- There would be less program consistency from DNR region to region. Many of the components of the revisions are intended to more clearly identify CAFO requirements in the code as opposed to conditions determined on a case-by-case basis as part of the permit issuance process.

### B. Changes to satisfy concerns of interested parties

- Some have argued that the proposed revisions are too prescriptive and do not provide the necessary flexibility to producers and Department staff in determining WPDES permit conditions. These arguments were reflected in the public comments received on the proposed rule primarily from producers and producer groups. One option would be to allow the Department more case-by-case determinations on all or some permit requirements (e.g., not

require six months storage for all operations; be less prescriptive on winter landspreading restrictions). This option would result in increased workload for individual department staff in determining those individual conditions, decreased program consistency in WPDES permit requirements, creation of what some may feel is not a level regulatory playing field from operation to operation, and, potentially, less assurance that affected citizens would have consistent and adequate environmental protection from possible CAFO water quality impacts. The Department has reviewed all comments received, and where possible and warranted, has attempted to provide flexibility. An example of a change to promote flexibility is the proposed allowance that producers can use different methods of assessing phosphorus delivery across an operation rather than needing to use the same method across for all of the operation's fields.

- Some have argued that different management practices, other than those proposed in the code, should be required (e.g., designed storage rather than temporary unconfined storage for solid manure). The Department recognizes that the requirements in the proposed rule do not represent true consensus on the conditions in the proposed rule; however, they do represent requirements that the Department believes are fair and provide adequate water quality protection given the often divergent concerns of stakeholder groups. The Department has listened to and attempted to address the concerns of the various stakeholder groups on the NR 243 TAC and those who commented on the proposed rule or will be impacted by the proposed rule.

### C. Other reasonable alternatives

- One option would be to limit the revisions to the code strictly to those issues identified in the federal CAFO revisions. This would mean focusing code revisions only on impacts to navigable waters and not addressing potential impacts to surface waters, groundwater or wetlands. Since the Department has authority to protect all waters of the state, addressing only impacts to navigable waters does not fulfill the Department's obligation to protect waters of the state.
- Another option which other states have pursued is the creation of a general permit that incorporates the federal CAFO rule revisions rather than revising or creating rules. In many respects, general permit creation and rule revision processes are very similar in that stakeholders are often involved in the drafting of the general permit and the general permit is subject to public hearing. While the general permit does allow for a clear means of implementing the federal CAFO rules, revising code requirements at the state level provides the Department with clearer authority for permit conditions contained in either individual or general permits. The Department still relies heavily on the issuance of individual WPDES permits for CAFOs and is likely to continue to do so for the majority of its operations.

  It is important to note that ch. NR 243 has not undergone significant revision since it was first promulgated in the mid-1980's. The Department made minor revisions to ch. NR 243 in 2002, primarily for smaller-scale animal feeding operations, to reflect the performance standards and prohibitions promulgated in ch. NR 151, Wis. Adm. Code. More significant changes to ch. NR 243 were not pursued because the Department recognized that additional revisions would be necessary in the near future in response to upcoming federal CAFO rule changes. Given the length of time without substantial revision, updates to the code reflect Department experience with CAFOs and the changes that have occurred in CAFO management since the mid-1980's are warranted.

## VII. EIS Recommendation

The Department is proposing the above analysis of proposed revisions to ch. NR 243, Wis. Adm. Code, is of sufficient scope and detail to conclude that this <u>is not</u> a major state action which would significantly affect the quality of the human environment. The Department is proposing that an environmental impact statement is not required prior to final action by the Department to

adopt this rule. The proposed determination was made considering the above analysis and the following factors:

## A. Environmental Effects and Their Significance

### Short-term and long-term environmental effects of the proposed rule modifications

The short and long-terms effects of the proposed rule revisions are expected to be positive. Improper practices from animal feeding operations can have significant impacts on water quality. This statement is supported by impacts documented by the Department every year, in particular in a recent 12-month period in 2004-2005 where there were 50 documented manure-related events. Runoff from feedlots, feed storage areas and land applied manure associated with these operations can result in fish kills, contaminated wells and loadings of pollutants that have long-term impacts on fish and aquatic life. Improperly designed manure storage and overapplication of manure can result in loadings of pollutants, nitrogen and pathogens in particular, that can result in groundwater contamination. The current version of ch. NR 243, and the proposed revisions to ch. NR 243, are intended to address these impacts.

The previous and revised federal CAFO rule essentially prevented discharges from the animal production area, which is now clearly reflected in ch. NR 243. In terms of restrictions on land application of manure and process wastewater, CAFO nutrient management planning requirements have historically been based on crop nitrogen need and have been an effective tool to minimize groundwater impacts. Proposed requirements to account for 2$^{nd}$ year manure credits will serve to further minimize these potential groundwater impacts. The Department has previously required CAFOs to adopt phosphorus-based nutrient management planning in targeted areas of the state. The most significant changes to ch. NR 243 that reflect federal provisions include statewide phosphorus-based nutrient management planning for CAFOs and additional restrictions on the application of solid and liquid manure on frozen or snow covered ground. This includes a prohibition of surface applications of liquid manure on frozen or snow covered ground and a requirement to have six months of storage for liquid manure at all CAFOs beginning in 2010. These proposed revisions to ch. NR 243 will decrease the amount and likelihood of pollutants, including phosphorus, nitrogen and BOD, entering surface waters as a result of manure runoff events and long-term pollutant loading associated with general runoff from agricultural fields where CAFO manure is applied.

As a result of these rules, it is expected that fish kills and nutrient loadings to surface waters associated with CAFOs will decrease. There are approximately 145 permitted CAFOs statewide, and an additional five pending applications, of an estimated 30,000 livestock operations in the state. CAFOs represent an estimated 11% of the manure that is generated in the state of Wisconsin. Since the vast majority of livestock operations fall under other state rules that are not as restrictive as the rules for CAFOs, the long-term benefits of the proposed revisions may be difficult to assess. However, there may be localized improvements to water quality in areas where CAFOs would otherwise make up the majority of loading to surface waters.

Since the new rules are not intended to promote or dissuade the operation of CAFOs in the state of Wisconsin, it is not expected that the proposed rule revisions by themselves will have secondary effects beyond the current existing version of ch. NR 243 on historic or cultural resources or threatened or endangered resources. Possible impacts will continue to be evaluated as part of permit issuance activities. Possible impacts to scenic or recreational resources may include changes to the aesthetic landscape as a result of the construction of liquid manure storage facilities that certain operations may not otherwise have built. A very small amount of prime farmland acreage could be impacted to the extent that areas used for crops could be converted to manure storage. However, the requirement that all CAFOs have phosphorus-based nutrient management plans could also result in the preservation of farmland since additional acreage may be necessary for manure and process wastewater land application.

A possible beneficial secondary impact is that because of additional controls on the potential discharges of pollutants from CAFOs, including areas where animal are confined and land application areas, certain ecologically sensitive or critical areas may be provided additional protection beyond the current version of ch. NR 243. Impacts from a permitted CAFO or inability or lack of desire on behalf of the CAFO to meet new code requirements may require that enforcement action be taken or that an operation reduce animal numbers at a given site to avoid impacts or code/permit violations. Although unlikely, economics, ownership decisions and other factors may result in certain operations converting to other land uses.

## B. Significance of Cumulative Effects

The proposed rule revisions are not intended to promote or dissuade the operation of CAFOs in the state of Wisconsin. However, certain operations may view the current rule or proposed revisions as onerous and they may stay below the 1,000 animal unit threshold to avoid regulation under the WPDES permit program. It is possible that some of these operations may meet the definition of a CAFO because of discharges present at the operation and may require coverage under a WPDES permit even though they are under the 1,000 animal unit threshold. It can be expected that the proposed rule revisions would have a cumulative beneficial water quality effect associated with operations that are covered under a WPDES permit. The primary beneficial effect would be a decrease in the overall load of pollutants from CAFOs to Wisconsin water resources. This effect may be most visible in areas where a CAFO or grouping of CAFOs may control the majority of land in a given area. A potential negative cumulative effect is a potential for increased odors associated with liquid manure storage facilities and landspreading of the stored manure. The extent of this cumulative impact is primarily associated with those operations that would not have built liquid manure storage if it had not been required. (Note: While it is estimated that 20-50% of currently permitted operations do not have six months of storage for liquid manure, many of these operations do have some amount of storage)

## C. Significance of risk

### 1. Significance of unknowns

The proposed revisions to ch. NR 243 attempt to strike a balance between providing clear and consistent best management practices (BMPs) and allowing the permittee flexibility to exercise professional judgement and management discretion. It is possible that the practices prescribed in ch. NR 243 may not provide adequate water quality protection under all circumstances (e.g., winter land application restrictions, allowances for headland stacking). One of the most significant unknowns with regard to CAFOs is weather conditions. The length of time high risk application conditions exist (frozen, snow-covered and saturated ground), the timing, form, and amount of precipitation that may impact runoff events and the impact weather has on crop growth are highly variable over any time period. In addition, under federal law, operations are allowed to have discharges to navigable waters of manure and process wastewater pollutants in accordance with certain restrictions (agricultural stormwater) that may cause water quality impacts. The Department has attempted to address these potential impacts by requiring considerations of forecasted precipitation and placing other protective restrictions designed to minimize the likelihood and potential impacts of discharges to waters of the state. Since the modifications to ch. NR 243 reflect program experience since the mid-1980's, it is expected that the BMPs identified in the proposed ch. NR 243 have significantly decreased the likelihood that impacts from potential unknowns will occur. However, where impacts have been identified, the Department can address the problem by working with the producer on a cooperative basis, modifying the nutrient management plan, modifying operation and maintenance requirements for a given structure or system, modifying permit requirements, taking enforcement action, further modifying code requirements or any combination of these actions depending on the particular circumstances. The ch. NR 243 program believes it has been able to address identified problems through the options listed and will continue to be able to do so.

It is often difficult to ensure that the professional judgement and management discretion afforded to permitted CAFOs will always avoid water quality impacts. However, such judgement and discretion are key components in instances where meeting code requirements cannot always be addressed via pre-determined best management practices. Combined with the BMPs identified in ch. NR 243 and the potential enforcement of WPDES permit requirements, the likelihood of such water quality impacts has been significantly reduced with the proposed revisions to ch. NR 243.

**2. Signficance of reasonably anticipated operating problems**

The environmental significance of operating problems associated with a CAFO may be severe, primarily because of the amount of manure and process wastewater these operations generate. Excessive or improper application of manure and process wastewater on cropped fields can result in groundwater impacts (high nitrates and pathogens in well water) and runoff to surface waters (low dissolved oxygen levels, eutrophication, fish kills). Failure to properly operate and maintain storage facilities can result in structural failures, overflows and spills.

The revisions to CAFO design and maintenance requirements for storage facilities and additional restrictions on land application of manure on frozen, snow-covered and saturated soils, are expected to decrease the potential of such impacts occurring as well as the severity of such impacts should operating problems occur. In addition, the proposed revisions include the requirement to create an emergency response plan to address operational problems if they occur.

**D. Significance of Precendent**

There are certain provisions for ch. NR 243 that do set precedent for the regulation of CAFOs. Current state rules do not require any length of storage for CAFOs. Ch. NR 243 would change this by requiring six months of storage for liquid manure and, in certain cases, two months of storage for solid manure. Current state rules and agricultural best management practices also do not prohibit the application of liquid manure on frozen and snow-covered ground. However, both the storage requirement and liquid manure application restrictions are warranted given the water quality impacts the Department has documented associated with land application of liquid and solid manure on frozen and snow-covered ground from all sizes of animal feeding operations.

The definition of agricultural stormwater in NR 243 outlines that certain discharges from land application areas from large CAFOs that impact navigable waters are allowable under the WPDES permit program, provided certain conditions are met. While this may be a concern with respect to protection of water quality, it is consistent with federal law. In addition, the Department has attempted to outline restrictions on applications of manure and process wastewater that will minimize the likelihood and impact of such discharges.

The Department is proposing to allow greater use of temporary unconfined stacking of solid manure in lieu of land application during winter months. Historically, temporary stacking of solid manure at CAFOs has been restricted to case-by-case approvals. While the proposed rule provides for greater use of headland stacking during winter months, the siting criteria for these stacks, the fact that temporary stacking is still subject to the production area “no discharge” standard, and the potential decrease in the overall amount of solid manure landspread on frozen and snow-covered ground provide significant potential water quality benefits. In addition, the Department can address unique siting issues or water quality impacts associated with temporary stacks as needed.

The proposed rule does attempt to more clearly delineate requirements for land application of manure and process wastewater as well as storage design and operation. However, it also allows the Department to make case-by-case determinations on appropriate permit conditions when necessary to protect water quality.

In general, the revisions to ch. NR 243 set precedent on how CAFOs are regulated until future revisions to the code occur. There are a number of issues where additional study is ongoing (e.g., phosphorus-based nutrient management, winter land application) that may influence what are

ultimately considered to be best management practices to address certain water quality impacts. Based on the results of these studies, it may be necessary to further modify ch. NR 243 at some point in the future.

The WPDES permit does not pre-empt the ability of local government to restrict or encourage the location of CAFOs in areas under their jurisdiction through the use of zoning. Local governments may also implement requirements more stringent than WPDES permit requirements under a local ordinance under certain circumstances. However, under the requirements of the proposed livestock siting rule, ATCP 51, local units of governments that require conditional use permits for the siting of a livestock operation would need to accept a valid WPDES permit as documentation that many of the water quality performance standards specified in ATCP 51 are being met.

The proposed rules are intended to be consistent with other state and federal laws to the extent that conditions or approvals connected with the WPDES permit program impact compliance with these laws (e.g., siting of storage facilities in relation to drinking water wells).

**5. Significance of Controversy over Environmental Effects**

Where there was opportunity for states to provide more detail for generally specified NPDES permit requirements within the scope of the federal rules, the revisions to ch. NR 243 are largely based on the input from a Technical Advisory Committee and public comment on the rule. It was clear that all members of the TAC as well as those commenting on the rule had a strong commitment to protecting water quality; however, there were very disparate views on how best to achieve that protection. In addition, Department experience with currently permitted operations, both good and bad, and the knowledge Department staff had in implementing an effective and enforceable WPDES permit program came into play when drafting proposed revisions and accepting feedback from TAC members and responding to public comment on the rule. It was also recognized that members of the TAC, particularly individual producers, were not able to speak for all affected operations statewide. Ultimately, the Department tried to achieve a balance between specific and consistent BMPs while providing permittees the needed flexibility to run a successful operation.

Certain requirements in the proposed revisions to ch. NR 243 reflect prescriptive federal CAFO rules that many members of the TAC, and producers at large, may find overly prescriptive (daily inspections of water lines, weekly inspections of manure storage facilities, 25-year and 100-year, 24-hour design requirements for animal production areas). This was reflected in many of the comments received at hearing and in writing during the public comment period on the rule.

Another issue that many producers and agricultural groups are likely to have with the proposed revisions is that they deviate from Natural Resources Conservation Service (NRCS) technical standards. A number of comments from producers and producer groups indicated a need for NR 243 to be as consistent as possible with NRCS standards and other rules. NRCS technical standards are essentially “how-to” manuals producers must follow when receiving federal cost-share dollars to install or perform certain practices such as installation of manure storage facilities. The two primary standards where this is particularly an issue are NRCS Standards 590 (Nutrient Management) and 313 (Waste Storage Facilities). While the Department incorporates these standards into the proposed revisions to ch. NR 243, it also incorporates requirements that are more restrictive than these standards. This is because the technical standards are primarily created for operations of all sizes that receive voluntary federal cost-share dollars to implement certain practices. The Department recognizes that these standards are very effective for smaller-scale operations. However, additional conditions are needed in ch. NR 243 to protect water quality when it comes to larger-scale operations due to their size and the amount of waste that they generate.

There continues to be debate over the subject of land application of manure on frozen or snow covered ground and whether there are circumstances under which this is an acceptable practice

for solid or liquid manure. Producers and academia point to a lack of data to clearly indicate whether applications of manure on frozen or snow covered ground are always prone to runoff or if there are conditions under which runoff can be avoided. This is especially important in light of the fact that storage facilities can be very expensive. Environmental advocates, including the U.S. EPA, largely promote prohibitions of any manure applications on frozen or snow-covered ground. A number of public comments on NR 243 referenced the need for more restrictive winter spreading restriction based on a recent 12-month period in 2004-2005 where there were 50 documented manure-related events. Based on Department experience, both in terms of environmental impact and what many producers are doing to address application during the winter, the proposed rules are more restrictive for liquid manure and less restrictive for solid manure. Environmental groups have expressed concern over potential groundwater impacts associated with temporary manure stacking as opposed to requiring a storage facility in accordance with NRCS Standard 313.

While federal CAFO rules require implementation of phosphorus-based nutrient management, proposed ch. NR 243 attempts to more clearly identify what should be contained in a phosphorus-based nutrient management plan. Producers and producer groups tend to be concerned over phosphorus-based requirements because of potential costs associated with hauling manure greater distances and/or the purchase of additional land to apply the manure.

## Appendix A

### Technical Advisory Committee Members for Ch. NR 243 Code Revisions

| Name | Group Represented |
|---|---|
| Dennis Frame | UW-Discovery Farms |
| Shelly Meyer | Professional Dairy Producers of Wisconsin |
| Alan Koepke | Professional Dairy Producers of Wisconsin/Koepke Farms |
| Keri Retallick/Mike Wheeler | Wisconsin Pork Producers |
| Andrew Hanson | Midwest Environmental Advocates |
| Laurie Fischer | Dairy Business Association |
| Tom Thrall | Environmental Defense |
| Jeff Polenske | Polenske Agronomic Consulting |
| Bill Berry | Wisconsin River Alliance |
| Scott Hartwig/Steve Hoffman | Wisconsin Egg Producers/S&R Egg |
| Jeff Opitz | Opitz Custom Heifers |
| David Crass | Michael Best & Friedrich, LLP |
| Walter Meinholz | Blue Star Dairy |
| Steve Jann | US EPA-Region V |
| Pat Murphy | Natural Resources Conservation Service |
| Nick Neher/Jim Vandenbrook | Department of Agriculture Trade and Consumer Protection |
| Paul Zimmerman | Wisconsin Farm Bureau Federation |
| Jim Kurtz | Private citizen |
| Tom Bauman | Wisconsin DNR |
| Gordon Stevenson/Russ Rasmussen | Wisconsin DNR |
| Mark Cain | Wisconsin DNR |
| Kristi Minahan | Wisconsin DNR |